MIS-52406C
15 September 1997
Supersedes
MIS-52406B
5 March 1997

INTERFACE SPECIFICATION

FOR

STANDARD SYSTEM INTERFACE REQUIREMENTS FOR ENGINEERING DATA

I have reviewed the contents of MIS-52406 relative to acquisition reform and certify that the Functional Support Templates have been applied and that the specification is an interface document.

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LARRY O. DANIEL
U.S. Army Missile Command
Standards Executive

DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited.

1. SCOPE

1.1 Scope. This specification covers the media data structure and format requirements for delivery of engineering data to the Joint Engineering Data Management Information Control System (JEDMICS) automated engineering data repository.

1.2 Classification. The media for delivery of engineering data will be of the following types and compositions:

1.2.1. Types. The types of media are as follows:

Computer-Aided Acquisition and Logistics Support (CALS) compliant media

Microfilm aperture cards

Compact Disk optical media

Other media types. Other physical media may be used by mutual written agreement between the contractor, contracting officer, and repository point of contact (POC).

1.2.2 Compositions. The compositions for media are as follows:

Composition A:

CALS raster data in accordance with (IAW) MIL-STD-1840 magnetic tape or electronic transfer and MIL-PRF-28002

Composition B:

Microfilm Aperture Cards - from 35mm unperforated roll, Type I-silver halide

Composition C:

Compact Disk - IAW International Standards Organization (ISO) publications ISO-9660 and ISO-10149.

Other - The composition for other media types shall be as agreed to in para 1.2.1

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are needed to meet the requirements specified in this specification. While every effort has been made to ensure the completeness of this list, document users are cautioned that they shall meet all requirements specified in this specification, whether or not they are listed in this paragraph.

2.2 Government documents

2.2.1 Specifications. The following specifications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

MIL-PRF-28000 - Digital Representation for Communication of Product Data: IGES Application Subsets and IGES Application Protocols

MIL-PRF-28001 - Markup Requirements and Generic Style Specification for Electronic Printed Output and Exchange of Text.

MIL-PRF-28002 - Raster Graphics Representation in Binary Format, Requirements For

MIL-PRF-28003 - Digital Representation for Communication of Illustration Data: CGM Application Profile.

STANDARDS

MILITARY

MIL-STD-1840 - Automated Interchange of Technical Information

HANDBOOKS

MILITARY

MIL-HDBK-59 - Continuous Acquisition and Life-Cycle (CALS) Support Implementation Guide

MIL-HDBK-331 - Directory of DoD Engineering Data Repositories

2.2.2 Other government documents, drawings, and publications. The following other Government publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

PUBLICATIONS

DODD 5230.24 - Distribution Statements on Technical Documents

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Defense Printing Service, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094)

2.3 Non-Government Publications. The following documents forma part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

INTERNATIONAL STANDARD ORGANIZATION PUBLICATION

ISO-9660 - Information Processing - Volume and File Structure of CD-ROM for Information Interchange

ISO-10149 - Information Technology - Data Interchange on Read-only 120mm Optical Data Disks (CD-ROM)

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Streeet, New York, NY 10036)

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Defense Printing Service, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

2.1.4 Order of precedence In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained and approved by the contractor, contracting officer, and repository POC.

3. REQUIREMENTS

3.1 CALS 1840 tape (composition A). The data transmitted via CALS compliant media shall be IAW requirements of composition A. The CALS compliant media shall permit the transmission of a transfer package IAW MIL-STD-1840. Some types of media may permit the transmission of more than one transfer package on a single unit of that medium. The location, arrangement, or other structuring of transfer packages on the medium shall be agreed to in writing prior to any delivery of data by the contractor, contracting officer, and repository POC. The location, arrangement, or other structuring of transfer sets, transfer units, and files within the transfer package shall be as specified in this section. Unless otherwise specified, the medium of delivery shall be 9-track magnetic tape. Other physical media may be used by mutual written agreement between the contractor, contracting officer, and repository POC.

3.1.1 Transfer unit format A transfer unit shall consist of one transfer unit declaration file and one or more transfer unit data file(s).

3.1.2 Transfer unit declaration file. The transfer unit declaration file provides all information necessary to uniquely identify the transfer unit and contains the count of each transfer unit data file type contained in the transfer unit.

3.1.3 CALS 1840 tape transfer package structure. File naming, file types, and file structure shall be implemented on all media IAW MIL-STD-1840.

3.2 Microfilm Aperture Card Media (composition B)

3.2.1 Media. Microfilm aperture cards shall be 35mm unperforated roll Type I-Silver Halide microfilm. Microfilm shall be prepared using only the document originals. If original documents are not available, written approval shall be obtained from repository POC and contracting officer before microfilming begins.

3.2.2 Roll identification targets. Roll identification targets shall be prepared for each roll of microfilm utilized.

3.2.3 Reduction Ratio. The reduction ratio used to microfilm engineering documents shall be: Not more than 18 inches wide and not more than 24 inches long with ratio of 16X, More than 22 inches wide and not more than 44 inches long with ratio 30X.

3.2.4 General aperture card requirements. All contractual requirements shall be met to assure proper acceptance of aperture cards in the automated repository. Inspection and acceptance of aperture cards will be based upon compliance with the following:

a. Background density shall be from 1.00 to 1.20.

b. Line densities shall not be less than 0.2. Dot matrix printers shall not be used.

c. Line width shall be IAW ANSI Y14.2 and shall be 15 mil minimum line width prior to reduction.

d. Documents shall be centered in microfilm frame.

3.2.5 Coding. Coding of aperture cards shall be as specified in paragraph 3.2.6 for hollerith codes and the Document Type Listing (DTL) at Appendix C for document type codes. Drawings not provided for in the DTL shall have no assigned document type and be blank in columns 1 and 2 of the aperture card.

3.2.6 Keypunch. Keypunch entries shall be as follows:

a. Entries shall be left justified and the unused spaces shall be blank unless otherwise specified in paragraph 3.3.8 subparagraph d(1) through (22).

b. Entries shall not have any open spaces (e.g., 6190 Assembly 29 would be keypunched as 6190ASSY29).

c. Roman numerals must be converted to an Arabic (e.g., Mark IX or Type IV would be keypunched as MK9 or TY4).

d. Keypunch "T" formatted cards (lower legends) per the following:

(1) Type of document (columns 1 and 2).

(2) Document number (columns 3-17).

(3) Contractor and Government Entity (CAGE) Code (columns 18-22).

(4) Sheet number (columns 23-25).
Right justified with zero padding.

(5) Revision letter (columns 26-27).
Right justified for single letter revision.

(6) Total number of sheets (columns 28-30).
Right justified with zero padding.

(7) Unused (columns 31-32).

(8) Weapon System Code (columns 33-34).
Right justified for single alpha/numeric entry.

(9) Distribution Statement Letter (column 35).

(10) Unused (columns 36-39).

(11) Card (frame) number (columns 40-42).
Right justified with zero padding.

(12) Leave blank (column 43).

(13) Total number of cards (frames) (columns 44-46).
Right justified with zero padding.

(14) Rights (Data) (column 47).

(15) Control Activity Code (columns 48-49).

NOTE: The Control Activity Code identifies the primary repository that controls the official record copy of engineering data. Codes used shall be IAW MIL-HDBK-331.

(16) Drawing Size (column 50).

(17) Card Code (column 51).

(18) Security Classification (column 52).

(19) Image Plane (column 53).

(20) Microfilm location (columns 54-76).

(21) Camera microfilm (column 77).

(22) Deck Number (columns 78-79).
Right justified with zero padding.

3.2.7 Aperture card sets Aperture cards shall be prepared and submitted as a set, in alpha/numeric sequence. Each set shall be accompanied by a sequential transmittal listing. Classified or limited rights data shall be submitted as a separate set.

3.2.8 Distribution statement Aperture cards of documents carrying any distribution statement other than A shall be stamped on the back of each card with the applicable distribution statement.

3.3 Compact disk physical media (composition C) The data transmitted shall be IAW requirements of composition C. The compact disk media shall be compliant with ISO-10149, ISO-9660, directory naming, file naming and data structure requirements provided herein. The location, arrangement, or other structuring of transfer packages on the medium shall be agreed to in writing by the contractor, contracting officer, and repository POC prior to any delivery of data.

3.3.1 Compact disk directory and file structure.

3.3.1.1 Directory and file names The CD media file naming, file types, and file structure shall be implemented IAW ISO-9660 and data requirements contained herein. Constraints imposed by ISO-9660 include:

a. A directory name shall not exceed 8 characters.

b. File names shall not exceed 8 characters with a 3 character suffix.

c. The number of nested sub-directories shall not exceed 8.

d. The compact disk media shall contain only one directory structure session.

3.3.2 Volume identifier file Each compact disk media shall contain a Volume Identifier File named VOLUMEID.TXT located at the root level of the file structure. The file shall contain, as a minimum, the Sender_Activity, Sender Point of Contact (POC) fields, Security_Classification and

Distribution_Restrictions field. The Security_Classification and Distribution_Restrictions fields shall contain the highest restriction of the data contained on the CD media. This file shall contain basic identification information in the sample format shown in APPENDIX A. Volume Identifier File (VOLUMEID.TXT) Sample.

3.3.3 Optional summary report file. A typical exchange of engineering data includes a summary report that provides general information concerning the data delivered. At the option of the data provider, this information may be included in digital format on the compact disk media. If provided in digital format, the summary report shall be provided as an ASCI Text file named SUMMARY.TXT located in the root directory of the media.

3.3.4 Metadata file. Each compact disk media shall contain a metadata file with filename of INDEX.DLF. The metadata file shall be located at the root level of the file structure. The metadata file shall contain one metadata record entry for each binary data file contained on the media.

3.3.4.1 Metadata file. The term metadata is used to describe the set of identification information (i.e. index data) which identifies a binary data file. The requirements which follow provide for the exchange of metadata in a delimited test file suitable for all binary data types.

3.3.4.2 Metadata record. The value of the data fields in the metadata record are used to populate the government's JEDMICS system database. The Metadata Record format shall be provided as described in APPENDIX B, JEDMICS Data Format Interface Specification (DFIS). All data fields marked with an "X" in the column labeled "Required/Notes" are required input data and shall be provided.

3.3.4.3 Usage of special characters. The single quote "'", percent "%", underbar "_", dollar sign "$", and pipe "|" characters shall not be used in any data element fields except for data elements 20 (Filename), 21 (File Extension), 22 (File Path), and 23 (Media Volume ID) where underbar "_" is a valid character. The pipe character "|" is used as a field delimiter and shall not be used for a value in any field.

3.3.4.4 Binary data file names. Each binary data file shall be identified by a unique file name. Since the Metadata Record contains a logical pointer to the binary data file, the file naming convention for binary data files is not critical and is at the discretion of the data provider. Use of the naming convention specified in MIL-STD-1840 is recommended but not mandatory.

3.3.4.5 Document number field. The Document Number (Field 1) shall not exceed 32 characters including the suffixed dash number. The single quote "'", percent "%", under "_", dollar sign "$", characters shall not be used in the Document Number Field.

3.3.4.6 CAGE code field. The CAGE Code (Field 2) shall not exceed 5 characters. When the design responsibility for engineering drawings is transferred from one design activity to another, the original drawing identity and CAGE Code shall not be changed or relocated to indicate a new CAGE Code.

The CAGE Code and address of the gaining design activity shall be added by revision action. The CAGE Code shall be the same on all sheets, with no mixed CAGE Codes within a drawing or document.

3.3.4.7 Document type code field The value of the Base Document Type (Field 3) and Accompanying Document Type Field (Field 50) shall be a value from Appendix C, Document Type Listing (DTL).

3.3.4.8 Document size field The value of the Document Size Field (Field 4) shall be one of the following: A, B, C, D, E, F, G, H, J, K, R.

3.3.4.9 Sheet number field The Sheet Number Field (Field 8) shall be a maximum of 4 characters and contain a numeric value.

3.3.4.10 Number of sheets field The value of the number of sheets Field (Field 9), Frame Number Field (Field 11), Number of Frames Field (Field 12), and File Type Field (Field 13) shall be numeric.

3.3.4.11 Data file type field The Designator for the Data Format Type of File (Field 13) shall be a value from Appendix D, JEDMICS Data File Types. Raster image files IAW MIL-PRF-28002, Type I, 200 dpi shall be indicated by placing a value of "8" in this field. Other Data File Types may be used by mutual written agreement between the contractor, contracting officer, and repository POC.

3.3.4.12 Security level field The value of the Security Level Field (Field 26) shall be on of the following: N, C, M. S, T, E, F, G, H, J, K.

3.3.4.13 Rights field. The value of the Rights Field (Field 27) shall be on of the following: K, G, R, L, N, P, U, S, T, Q, X, Z.

3.3.4.14 Foreign secure, nuclear and subsafe fields The value of the Foreign Secure Field (Field 28), Nuclear Field (Field 29), and SubSafe Field (Field 30) shall be the character "Y" if the condition is true or the character "N" if the condition is false.

3.3.4.15 Distribution statement code field Documents with a distribution restriction other than unlimited (value of "A") shall be indicated by an entry in the Distribution Statement field (Field 49) of the Metadata Record IAW Department of Defense Directive 5230.24.

3.3.5 Binary data file path The location of each binary data file shall be provided by indicating the Filename (DFIS Field 20), File Extension (DFIS Field 21), File Path (DFIS Field 22), and Media Volume ID (DFIS Field 23) in the metadata record.

3.4 Alternative media. Other physical media which support a hierarchical data file structure may be used in lieu of compact disk by mutual written agreement between the contractor, contracting officer, and repository POC. Other alternative mechanisms for automated data exchange, such as Electronic Data Interchange (EDI), may be used by mutual written agreement between the contractor, contracting officer, and repository POC.

3.5 General requirements

3.5.1 Control activity code The Control Activity Code (Field 34) shall be provided IAW MIL-HDBK-331. This code identifies the primary repository that controls the official record copy of engineering data.

3.5.2 Distribution statements. Distribution statements shall be affixed IAW DODD 5230.24 and the contractual requirements.

3.5.3 CALS raster image data The digital representation of raster graphics shall be prepared IAW MIL-R-28002, Type 1, Untitled Raster Graphics Data (Default Mode). Specific requirements for Type I raster binary data blocks, for Type 1 raster graphics, requires that the binary blocks following the header record shall contain CCITT Recommendation Group 4 encoding of raster image data. Compression shall be CCITT group-4 non-wrap format.

3.5.3.1 Raster binary data Type 1 raster binary data shall be delivered as required, unless contractual requirements specifically authorize delivery of Type 4 raster binary data.

3.5.3.2 Raster data file header records Files of Type 1 or Type 4 raster binary data are initiated by a datablock containing header records that characterize the image encoded by the raster data. Default values IAW MIL-STD-1840 shall be used in the absence of a permissible definition of the header record value.

3.5.3.3 Raster image orientation Raster image orientation is dependent on the orientation of the scanned medium relative to the scanning mechanism. For typical scanning of technical documentation the pel path direction shall be 0 degrees and the line progression shall be 270 degrees. The permissible values for the pel path direction are "0", "90", "180", and "270". The permissible values for line progression are "90" and "270". The default values shall be "0" for the pel path direction and "270" for the line progression.

3.5.3.4 Raster image pel count Raster image pel count shall be utilized to identify the dimensions of the original image in a coordinate system defined by the pel path and line progression directions. The dimensions shall be a set of any two positive integers.

3.5.3.5 Raster image density Raster image density shall be 200 pels per inch.

3.6 Raster image quality requirements All contractual requirements shall be met to assure proper acceptance of raster image data in the automated repository. The Contractor is responsible for the performance of all inspections to include certifying that all tests for reduction ratio, resolution, centering, spacing, and background density have been performed when submitting raster image data. Inspection and acceptance of raster images will be based upon compliance with the following:

a. Documents shall be centered in frame.

b. Image shall have approximately the same visual diffuse transmission density as the area in the frame surrounding the document image area.

c. Extraneous data, clutter, etc., which is not part of the engineering drawings (including contractor ID numbers) shall not be visible on the image.

d. Lines shall not bleed, blur, or fill in.

e. The resolution of the image shall provide a separation of lines through their entire length in both groups of the specified patterns listed below. If lines do not show separation through the entire pattern, the image shall be rejected.

NOTE: Interpretation of the resolution test for aperture cards is as follows:

		16X	30X
Class 1	silver halide	7.1	4.5
Class 2	1st generation diazo	6.3	4.0
Class 3	2nd generation diazo	5.6	3.6
Class 4	3rd generation diazo	5.0	3.2

f. Reproducibility - Legible documentation shall be reproducible down to Class 3.

NOTE: Reproducibility requirements apply to all forms of media delivery.

g. Distribution statements shall be affixed IAW DODD 5230.24 and the contractual requirements.

3.7 Multiple sheet additions and/or deletions Any sheet additions shall be added to the end of the document with continuous sheet count. Alpha sheets shall not be used. Sheet deletions to a document will require all sheets, after the deletion, to be renumbered and the document submitted in its entirety.

3.8 Position of book form drawings or documents All documents, including book form drawings, shall be positioned one sheet per frame/image. Changes to documents previously positioned and submitted with multiple sheets per frame/image, shall be submitted with the entire document positioned one sheet per frame/image. The entire document shall be submitted at the next revision level.

4. ACCEPTANCE

4.1 Quality Assurance

4.1.1 Raster image data acceptance All contractual requirements shall be met to assure proper acceptance of raster image data in the automated repository. The contractor is responsible for the performance of all

inspections to include certifying that all tests for reduction ration, resolution, centering, spacing, and background density have been performed when submitting raster image data.

4.1.2 Aperture card media. The Contractor is responsible for the performance of all inspections to include certifying that all tests for reduction ratio, resolution, centering, spacing, and background density have been performed when submitting microfilm aperture cards. All aperture cards submitted for acceptance will be processed on card scanners, which are designed to the requirements cited herein.

4.2 Validation. Contractors delivering media shall be validated as to their ability to deliver said media. The Contractor is responsible for the performance of all inspection requirements as specified herein.

4.3 Data rejection. Physical media or data delivered which does not meet the inspection and testing requirements herein will be rejected by the Government. Unreadable physical media will be returned to the originator with a memorandum explaining the reason for return. EDI files will be deleted and a memorandum outlining the reason for rejection will be sent to the originator. Original media will not be returned when a small portion of the data is rejected during the quality assurance checks. Rather, data records (e.g. documents) rejected during quality assurance checks will be identified with reason for rejection noted on a memorandum to the originator. The contractor shall resubmit the corrected media/data within 30 days.

5. PACKAGING, LABELING, AND MARKING

5.1 Packaging.

5.1.1 Physical media protection. It shall be the responsibility of the sender of compact disk media to package the media (referred to as Delivery Package) to adequately protect against dirt, moisture, and mechanical damage such as scratches or bending, and exposure to excessive light or heat. Since compact disk are optical media, no special electromagnetic field protection is required.

5.1.2 Other media. Other paper documents (e.g. reports and tabulations), if used as part of a delivery package, shall be preserved and packaged IAW best commercial practice and in a manner that will afford protection against corrosion, deterioration, and physical damage during direct shipment to the first receiving activity.

5.1.3 Aperture cards. Aperture cards and tabulations shall be preserved and packaged IAW standard commercial practice and in a manner that will afford protection against corrosion, deterioration, and physical damage during direct shipment to the first receiving activity.

5.2 Labeling.

5.2.1 CALS compliant 1840 tape media. All magnetic tape transfer media shall have a media label affixed to or printed upon it IAW MIL-STD-1840.

5.3 Marking.

5.3.1 Magnetic media. Encoded magnetic computer tape or disk shipping containers shall be conspicuously labeled with a warning “MAGNETIC MEDIA - Keep away from magnetics or electric motors.”

5.3.2 Compact disk. All compact disk transfer media shall have identification information printed upon it identifying the contents of the media. The markings shall be accomplished using indelible ink. Gummed paper labels shall not be used due to potential contamination of computer equipment

5.3.2.1 Distribution statement. The compact disk media shall be marked with the highest distribution statement of any document contained within the media.

5.3.2.2 Delivery package markings. The compact disk delivery package shall be conspicuously labeled with a warning "Fragile, Optical Media, Keep Away From Excessive Heat or Light, Do Not Bend". The delivery package shall contain the receiving POC address.

5.3.3 Other transfer media. Other transfer media shall be marked IAW the agreements made by the contractor, contracting officer, and the repository POC.

5.3.4 Distribution statement. Delivery media and aperture card sets shall be marked with the highest distribution statement of any document contained on the media/set.

6.0 NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. This document is intended to be used to ensure that engineering data interface requirements are met. The intent of this interface document is to utilize readily available commercial computer technology (such as compact disk technology) to achieve digital exchange of information between contractor and government entities. Emphasis has been placed on defining data format and structures such that consistency can be maintained while incorporating new digital media that becomes widely utilized. The data structures described in the document are based on a media that supports a hierarchical file system and as such are applicable to a variety of other transfer media. Alternative transfer media may be used by mutual written consent by the contractor, contracting officer, and repository POC.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.

b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).

c. Packaging requirements (see 5.1).

Custodian:
Army (MI)

Preparing Activity:
U.S. Army Missile Command
Redstone Arsenal, AL
35898-5270
(ERR)
(ECP MI-D2438)

APPENDIX A. Volume Identifier File (VOLUMEID.TXT) Sample

```
VOL_TITLE               :AV7C9054
Volume_ID               :AV7C9054_V1
PWD                     :AV7C9054
Volume_Created Date     :03/25/97
Volume_Number           :01
Volumes_in_Set          :01
Sender_Activity         :US Army Aviation and Missile Command, Redstone
Arsenal AL
Sender_POC_Name         :Eddie Baddley
Sender_POC_Address      :Building 4722 Rideout Road, Redstone Arsenal AL
Sender_POC_Phone        :(205) 876-8351
Sender_POC_Fax          :(205) 842-7360
Sender_POC_EMAIL        :
FEES                    :This media provided at no cost to perspective Bidders
Security_Classification :Unclassified
Classification_Authority:US Army Missile Command Redstone Arsenal AL
Security_Handling       :For Official Use Only
Declassification Date   :
Distribution_Restrictions:Unrestricted
Jobs_Contained          :AV7C9054
```

APPENDIX B. JEDMICS Data Format Interface Specification (DFIS)

Num	DATA ELEMENT	Purpose	Max # Chars	Required & Notes
1	JMX_BaseDocNumber	Document Number (Base Document)	32	x
2	JMX_BaseDocCage	Commercial and Govn't Entities Reference (Base Doc)	5	x
3	JMX_BaseDocType	Document Type (Base Doc)	2	x(4)
4	JMX_DocumentSize	Size of drawing	2	x
5	JMX_BaseDocRevision	Document Revision (Base Document)	2	x (4)(6)(11)
6	JMX_DocumentRevDate	Document Revision Date	18	x(7)(12)
7	JMX_DocumentTitle	Document Title	40	x
8	JMX_SheetNumber	Sheet Number of Document	12	x
9	JMX_NumberOfSheets	Number of Sheets for Document	4	x
10	JMX_BaseDocSheet	Revision Sheet Revision (Base Document)	2	x(4)(11)
11	JMX_FrameNumber	Frame Number	4	x
12	JMX_NumberOfFrames	Number of Frames for Sheet	4	x
13	JMX_FileType	Designator for the Data Format Type of File	5	x
14	JMX_FileTypeFormat	Description of the Format of the File Type	20	(3) (10)
15	JMX_FileTypeSrcFlavor	Description of the File Type Source Flavor	20	(3) 10)
16	JMX_FileTypeDestFlavor	Description of the File Type Destination Flavor	20	(3) (10)
17	JMX_FileTypeContent	Description of the File Type Content	20	(3) (10)
18	JMX_FileTypeVersion	Description of the File Type Version	14	(3) (10)
19	IDX_DfisSourceCage	CAGE Code of The Originator of The DFIS Data Set	5	x (3)
20	IDX_FileName	File Name of Image File (without extension)	8	x (8)
21	IDX_FileExtension	File Extension of Image File	3	x (8)
22	IDX_FilePath	File Path Where Image File is Located	242	x(8) (9)
23	IDX_MediaVolumeID	Media Volume ID of Media Where File is Located	11	x (8)
24	IDX_MajorGroup	Major Group Designation Within Index	20	
25	IDX_MinorGroup	Minor Group Designation Within Index	8	

26	JMX_SecurityLevel	Security Level	1	x	e.g "N"
27	JMX_Rights	Viewing Rights	1	x	e.g."U"
28	JMX_ForeignSecure	Indicates if Foreign Personnel May View the Drawing	1	x	e.g."N"
29	JMX_Nuclear	Indicates if Drawing Contains Nuclear Equipment	1	x	e.g."N"
30	JMX_Subsafe	Indicates if Critical Safety	1	x	e.g."N"
31	JMX_AirType	Model/Device	6		
32	JMX_Apl	Allowance Parts List	35		
33	JMX_CadInfo	Computer Aided Design Reference	2		
34	JMX_ControlCode	Activity Code Furnished by Procuring Activity	2	x	
35	JMX_Hsc	Hierarchical Structure Code	12		
36	JMX_Nsn	National Stock Number	13		
37	JMX_Uic	Unit Identification Code	5		
38	JMX_System	Associated Equipment/System Group	32		
39	JMX_Nomenclature	Name of Equipment Described in the Drawing	20		
40	JMX_ShipClass	Ship Classification	4		
41	JMX_ShipTypeHullNum	Ship Type/Hull Number Classification	9		
42	JMX_MasterLocation	Engineering Drawing Master Location	30		
43	JMX_OfflineLocation	Engineering Drawing Off-line Location	80		
44	JMX_ParentCage	CAGE of Parent Drawing	5		
45	JMX_ParentDocNumber	Drawing Number of Parent Drawing	32		
46	JMX_PartNumber	Identifies Associated Part Number With CAGE	32		
47	JMX_SubSheet	Further Identifies Sheet	3		
48	JMX_Succeeding	Drawing Number and CAGE of Superseding Drawing	20		
49	JMX_DistStmt	Distribution Statement	2	x	
50	JMX_AccDocType	Accompanying Document - Document Type	2	x	(5)(4)(13)
51	JMX_AccDocNumber	Accompanying Document - Document Number	32	x	(5)(13)

52	JMX_AccDocCage	Accompanying Document - CAGE Code	5	x(5)(13)
53	JMX_AccDocRevision	Accompanying Document - Document Revision	2	x(5)(4)(13)
54	[Blank]	[This Field Reserved For Future Use]	0	
55	[Blank]	[This Field Reserved For Future Use]	0	
56	JMX_WeaponsSystemCode	Weapon System Code		15
57	IDX_DfisVersion	Version of the DFIS Structure Implemented	4	x"1.0"
58	Record End	Indicate end of record CR/LF (Hex 0D0A)	2	x

JEDMICS Data Format Interface Specification (DFIS) Notes:

1. The Data File Index Structure (DFIS) is a character delimited ASCII text file with one Image Row Entry (Record) per image referencing a data file in a hierarchical directory structure. The file and hierarchical directory structure naming conventions are not pre-defined. Each Image Row Entry contains a sequenced series of pre-defined standard Data Elements (Fields) separated by the pipe bar character "|". Image Row Entries are separated by a Carriage Return/Line Feed (CR/LF). A pipe bar character "|" is required between Data Elements 57 and 58 (CR/LF). There shall be no blank lines, or lines that do not conform to an Image Row Entry description as defined in the DFIS.

2. The DFIS file format does not pre-define the size (width) of the Data Elements. Data Element sizes defined indicate the maximum size allowed. Padding of Data Elements is not required (i.e. Sheet 1 can be entered as "|1|" and does not require an entry of "|000000000001|". All entries in Data Elements shall be uppercase. Leading and trailing spaces within the Data Element are ignored. For example,
"| 1 |" will be interpreted the same as "|1|". Null entries shall be represented by two consecutive pipe symbols such as "||".

(3) DFIS Usage Only. These Data Elements are informational within the DFIS to describe Data Element 13 (FileType) and are not used as part of the input to a JEDMICS.

(4) Mandatory Data Element where "blank" is a valid entry. Null is not a valid entry (i.e. "| |" is valid, "||" is invalid). "Blank" is not a valid entry for other Mandatory Data Elements.

(5) Mandatory Data Element when Image Row Entry is an Accompanying Document.

(6) The Document Revision (Data Element 5) for multiple sheet documents will be the same as the Sheet Revision (Data Element 10) for Sheet 1 of the document for the other sheets of the document.

(7) Enter the date of the original drawing when drawing is the original release (i.e. Data Element 10 (Sheet Revision) is blank).

(8) Data Elements 20 (Filename), 21 (File Extension), and 23 (Media Volume ID) entries shall contain only ISO-9660 d-characters. Data Element 22 (File Path) shall contain only the d-characters and either the backslash "\" or "/". The d-characters consist of the letters A through Z (upper case), the numbers 0 through 9, and the underscore symbol "_". Corresponding file names of the data files on the media shall conform to ISO-9660 Level 1-compliant DOS names (8+3) and contain only d-characters. Individual sub-directory names within the File Path shall not contain more than eight (8) characters and consist only of d-characters. The backslash "\" (recommended) or forward slash "/" characters are to be used as the separators between individual sub-directory names (do not use both). A trailing slash shall not be used at the end of the directory structure (e.g. "\images\01" or "images\01"). If a relative path is used (i.e. "images\01"), the current directory is taken from the perspective of the location of the DFIS index file. Example, if there is a directory structure "\images\level1\level2", and the path within Data Element 22 (File Path) is "level1\level2", the DFIS file must be physically located in the sub-directory "\images\level1"., Drive letter designator and colon are not to be used as part of Data Element 22 (File Path).

(9) If media is an ISO-9660 Compact Disk, Data Element 22 (File Path) shall not exceed 66 characters (including directory names, and slashes) and shall not exceed eight (8) levels in a directory hierarchy.

(10) Data Element 13 (File Type) is the JEDMICS five character File Type code which indicates the file format of the image file (e.g. CALS Type I raster, Autocad 13 Vector, etc.). A listing of current JEDMICS values is shown in Appendix D JEDMICS Data File Types. Data Elements 14 through 19 are descriptors of Data Element 13.

(11) JEDMICS stores only one revision value for an Individual Sheet of a Base Document, the Sheet Revision. This value is stored in both the Base Document Revision and Base Document Sheet Revision database fields within JEDMICS. The Drawing Revision is calculated by JEDMICS during execution using algorithms. For this reason, both the Base Document Revision and Base Document Sheet Revision database fields within JEDMICS will be populated with the same DFIS

Data Element, Data Element 10 (Base Document Sheet Revision) for a Base Document and Data Element 5 (Base Document Revision) is ignored.

(12) Dates will be expressed in the following format: DD-MON-YY:HH24:MI:SS were DD is the Day, MON is the Month, YY is the Year, HH24 is the 24 hour representation of the Hour (i.e. 15 for 3:00PM), MI is the Minutes, and SS is the Seconds. Examples include "27-JUN-96:15:50:59" and 28-JAN-92:00:00:00.

(13) ACCOMPANYING DOCUMENT NOTES:

(13.1) Data Elements 1, 2, 3, 5, & 10 (Document Number, CAGE Code, Document Type, Document Revision, and Sheet Revision) pertain to the Base Document when an Image Row Entry describes an Accompanying Document. Only the aforementioned Data Elements shall contain entries pertaining to the Base Document for an Image Row Entry describing an Accompanying Document. All Data Elements other than the aforementioned pertain to the Accompanying Document when the Image Row Entry represents an Accompanying Document. Within JEDMICS, an Accompanying Document is associated with a Base Document's Document Revision (Sheet Revision of Sheet 1 of the Base Document). Therefore, during insertion of an Accompanying Document to a JEDMICS system, the Base Document Revision for an Accompanying Document within JEDMICS will be populated with the DFIS Data Element 5 (Base Document Revision). Data Element 10 (Base Document Sheet Revision) is ignored during the insertion of an Accompanying Document into a JEDMICS system.

(13.2) Data Elements 54 and 55 are not defined in current implementation of the index but are retained as place holders for future use. These Data Elements shall be null.

(13.3) If Data Element 51 (Accompanying Document Number) is non-null and contains entries other than blanks, then the Image Row Entry is assumed to be describing an Accompanying Document.

(13.4) Data Element 52, (Accompanying Document CAGE Code) is included in the Index but is not currently used in populating the JEDMICS database during a JEDMICS import. The Accompanying Document CAGE Code in JEDMICS is assumed to be the same as the Base Document CAGE Code (Data Element 2, JMX_cage). Data Element 52 is included only to provide the ability to accurately capture the data for potential future use. Data Element 2 (Base Document CAGE Code) SHALL NOT BE USED to reflect the actual Accompanying Document CAGE code if it is different from the Base Document CAGE Code. Doing so will cause the relationship between the Accompanying Document and the Base Document to not be established within the JEDMICS database.

X. The Data Element marked is a required Data Element for input of data to JEDMICS.

APPENDIX C. DOCUMENT TYPE LISTING (DTL)

CODE	TYPE OF DOCUMENT
AM	Amendment to Missile Specification (MIS) Missile Purchase Description (MPD), or System Specification (SS)
AW	Artwork
CP	Equipment Development Specification
DL	Data List
D7	Stable Base/Master Pattern
D9	Digital Data
EC	Inspection Equipment Calibration Procedures
ED	List of Equipment Depot Installed
EL	Inspection Equipment List
EM	List of Equipment - Manufacturer Installed
EP	Engineering Change Proposal(ECP)
ER	Engineering Release Record(ERR)
ET	List of Equipment - Troop Installed
ID	Interconnecting Diagram
IM	Instruction Manual
ME	Military Exception (AMCOM in-house Only)
MS	Missile Specification (MIS)Program Peculiar Specification/Missile Purchase Description (MPD)
NT	Notice to Missile Specification (MIS) Missile Purchase Description (MPD), or System Specification (SS)
OI	Inspection Equipment Operating Instructions
PE	Performance Specification / Detail Design Document/Purchase Description
PL	Parts List

PD	Packaging Data Sheet/Special Packaging Instructions
PR	Process Specification
SC	Schematic Diagram
QS	Supplemental Quality Assurance Provisions (SQAP) and Quality Assurance Provisions (QAP)
SM	Material Specification
SS	System Specification
SU	Supplement to Missile Specification (MIS), Missile Purchase Description (MPD), or System Specification (SS)
TP	Test Procedure/Tape Procedure Computer Program
TS	Test Specification
QR	Quality Requirements
WL	Wiring List

(NOTE: For Type of Document Codes not listed above, contact repository POC.)

Appendix D JEDMICS Data File Types

FILE TYPE	ABBR CODE	DATA DESCRIPTION	DOS EXT
1	RSTR	C4 -JEDMICS Native Raster	C4
2	IGES	Initial Graphics Exchange Spec	IGS
3	CGM	Computer Graphics Metafile	CGM
4	SGML	Standard Generalized Markup Language	SGM
5	ASCI	ASCII Text	TXT
6	OFFL	Off-Line Stored Data	OFF
7	RSTR	NIFF - Navy Image File Format	NIF
8	RSTR	CALS Type I Raster	CT1
9	BIN	Binary Data of Unknown Type	UNK
20	RSTR	Tagged Image File Format (TIFF)	TIF
21	RSTR	Personal Computer Graphic (PCX)	PCX
23	RSTR	Encapsulated Postscript File (EPS)	EPS
25	RSTR	Generic Raster Type Unknown	RST
26	EXT	External to JEDMICS (unknown)	EXT
27	RSTR	CALS Type II	CT2
28	NIOF	No Image on File	EXT
29	PDF	Portable Document Format	PDF

(Note: Additional Data File Types are added as the repository system is enhanced. Contact the repository POC for the latest list of support Data File Types)